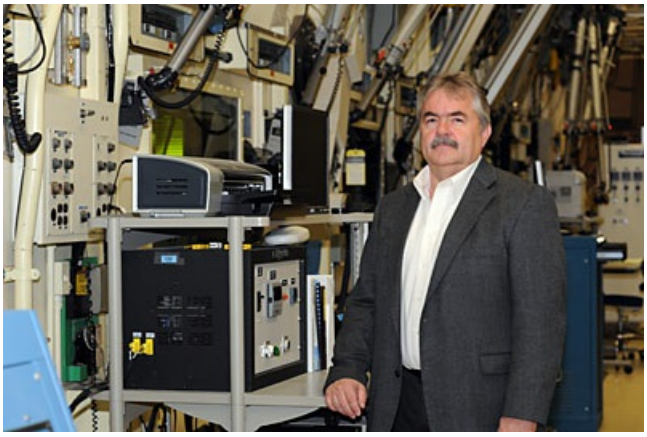


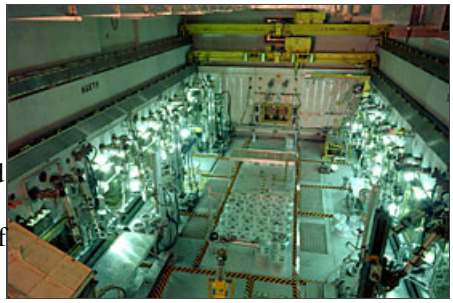
Doug Toomer is focused on making INL the laboratory of choice for performing nuclear fuels research and post-irradiation examinations.

Idaho Assets Serving National Nuclear Energy Needs; Toomer leads the way in reaching out to industry

By Cathy Koon for *INL Communications & Governmental Affairs*

Doug Toomer is just the guy for his new job at Idaho National Laboratory.

The 35-year INL veteran has a passion for seeing the national lab become the world leader in nuclear fuel research and post-irradiation examination (PIE), and believes INL has the people and the capabilities to make a real difference in nuclear energy. And he says he has the knowledge, understanding and tenacity to get the job done.



The Hot Fuel Examination Facility is the lab's largest hot cells dedicated to radioactive materials research and fuels examination.

His is a new position at INL, created after the state of Idaho and U.S. Department of Energy signed a Memorandum of Agreement on Jan. 6, 2011, streamlining the process for INL to receive and store research quantities of spent nuclear fuel from commercial nuclear power plants. As manager of Industry Programs for the Nuclear Science and Technology Nuclear Fuels and Materials Division, Toomer is responsible for working with the nuclear industry so it can take advantage of INL's vast capabilities to resolve issues and help prepare for tomorrow.

Working with industry is not new for INL, but the agreement enables INL to support industry in a way no other national laboratory can.

"I am working to take advantage of what the agreement provides INL, and am focusing on the commercial nuclear industry and what INL needs to do to achieve its strategic objective of being the government's and industry's laboratory of choice for performing nuclear fuel research and post-irradiation examinations," Toomer says. "This single action was a major game changer in enabling INL to really support the commercial nuclear industry."

It's now his job to provide strategic business leadership, direction and integration necessary to support that objective; develop and grow INL's business by interfacing and collaborating with entities involved in the commercial nuclear power industry (Electric Power Research Institute, U.S. Nuclear Regulatory Commission, fuel suppliers, utilities, etc.) to establish and maintain trusting relationships, and to fully understand their fuels and materials development, and PIE and characterization needs; and determine how INL can meet those needs, where gaps are, and how to bridge them.

A commercial nuclear fuel assembly consists of hundreds of fuel rods.

Speaking of how he plans to approach the job, Toomer says, "before you can help someone, you have to understand what they need, not what you think they need. Therefore, I will first work to truly understand what industry's needs are; then I'll work to match our capabilities with their needs and develop ways to satisfy those needs. When we start doing this and are able to show industry what we can do, their confidence in the lab and our performance will grow, and we will become the 'go-to' laboratory for the nuclear industry, not just domestically, but internationally also."

INL is the nation's lead laboratory for nuclear energy. "To me, that means that we are to fully understand the nuclear industry and how to help deployment of nuclear energy as a safe and reliable energy source for the nation. This means helping build confidence in nuclear energy, helping industry deploy new technologies, helping resolve current issues and apply lessons learned to future fuel, material and reactor designs, and help bridge the gap from current reactors to next-generation reactors," Toomer says.

"We must understand that no matter what we do as a laboratory, it is the nuclear industry that will do the deployment and implementation," he says. "Industry is key to the success of nuclear energy and therefore key to INL's success as the nation's laboratory for nuclear energy."

During examination, several rods are removed from an assembly at the reactor site and sent to INL.

"To be successful, we need industry to have confidence in us and see that we are of value to them. It is important that industry views INL as a national asset that is critical to them, especially during tough budget times."

Nuclear power is clean and stable. It also generates electricity at a comparatively low cost per kilowatt-hour. However, some costs associated with nuclear power plants are significant. Reactors and support facilities cost billions of dollars to build. And the fuel to operate them, which needs to be replaced periodically, costs millions. Reactor owners need to make sure that problems do not occur with their reactors and that the fuel performs safely and lasts as long as possible.

To assure fuel safety and performance and to make improvements where possible, utilities, fuel suppliers (e.g., AREVA, Westinghouse, GNF) and industry organizations such as the Electric Power Research Institute (EPRI) are continuously doing research and performing examinations of irradiated fuels and materials. Prior to the Memorandum of Agreement, the United States had limited capabilities to perform PIE, which often forced the American nuclear industry to go to other countries for the examinations.

But with the January 2011 agreement,,INL has the opportunity to enable industry to use INL's PIE capabilities and to establish premier capabilities within the U.S. that will support industry's current and future needs. This not only keeps the work from leaving the country, but also ensures that the United States has the capabilities for its own needs and does not become reliant on foreign resources.

Doug Toomer works to inform the nuclear industry about INL's vast nuclear research capabilities, infrastructure and expertise.

When an industry entity has a need for a fuel or material examination, it typically sends out a Request for Proposal, or an RFP, describing what work and examinations it wants done and asking for quotes from service providers (Studsvik in Sweden, INL, etc.) for performing the work.

In response, each provider submits a proposal saying how much it will cost and how long it will take to do the work. "Obviously, INL is not guaranteed to get the work. It will depend on what our costs are and how long it will take. And, of course, when we get a job, the quality of the work we do must be exemplary if we want to get more work," Toomer says. "It's also important to note that INL provides services that are generally not available from other companies in the United States. We, as a national lab, do not compete with U.S. industries or companies for the work."

Toomer says he has "a very good understanding of the entire nuclear energy cycle, as well as what capabilities INL and the nation have. I'm a big-picture strategic person, and I can generally see and draw connections to achieve strategic goals and objectives. I'm tenacious. I'll work something until we achieve success."

He is not one to just accept the status quo and accept that something can't be done just because someone says so. "Let's work to see the reasons why we believe it can't be done and see if they are valid reasons. If there are valid reasons, fine, but if it's just because it's something someone said or because it's always been done that way, that's when I push to change things to do what is necessary to achieve success. This may bother some people initially, but after they get to know me, they realize that I'm truly trying to make things better and easier for all involved."

INL Deputy Laboratory Director Dave Hill and Doug Toomer (left) explain INL's role in the treatment of Hanford's Fast Flux Test Facility fuel to Idaho Lt. Gov. Brad Little.

Toomer has been with INL and its predecessors for more than 35 years, primarily at what is now called the Idaho Nuclear Technology and Engineering Center. He has experience in spent nuclear fuel handling, storage and reprocessing, nuclear material management, facility operations and management, and project management. He has worked with nearly all the other national laboratories, the state of Idaho, and many entities within the commercial nuclear industry. Most recently, he was a special projects manager working directly for Deputy Laboratory Director Dave Hill and Director of Nuclear Assurance Art Clark.

In that role, he managed short-term critical outcome/high visibility projects for the laboratory director and individual deputy laboratory directors. He worked with DOE and other government organizations, and the state of Idaho to reach understandings and support necessary for achievement of INL strategic objectives. He also worked with the commercial nuclear industry (EPRI, AREVA, reactor operators, etc.) to develop and maintain trusting relationships. One of the efforts in this position was to work with DOE and the state of Idaho to develop the Memorandum of Agreement signed in January. As an alumnus of Idaho State University in operations and production management and a certified project management professional, Toomer says, "I'm not the scientist; I'm the guy who works to get things done."

So what can INL do for industry? A lot, according to Toomer. "Not only do we have unique facilities such as the Hot Fuel Examination Facility and the Advanced Test Reactor, but we have a lot of highly educated and experienced people who understand the ins and outs of reactors, nuclear fuels, materials, effects of radiation, etc. We have done everything associated with nuclear power from designing, building and operating reactors (we've built 52), to storing and reprocessing spent/used nuclear fuel. We have a wealth of resources available that, I dare say, can solve nearly any issue industry has."

Feature Archive